

IN THE CLAIMS:

A listing of the claims, as amended herein, is provided below:

1. (Currently Amended) A ~~numerically controlled~~ reciprocating submersible pump apparatus, comprising a sieve tube, a drive and a pump, the whole apparatus capable of being placed in an underground oil reservoir; wherein the drive consists of a stator having an upper end and a lower end and a reciprocating head with iron cores inside the stator; the stator and the reciprocating head form a friction couple via supporting guides and the reciprocating head iron cores; ~~characterized in that~~ wherein, with an airtight cavity, the upper end of the stator is connected to a lower end of the pump through the sieve tube; the pump is connected to an oil tube; the stator's lower end is connected to a balancing sieve tube, an end plug and an end coupler of the drive serially, and said stator comprises a stator frame and wherein there are multiple circular iron core winding groups comprising circular iron cores and circular windings inside said stator frame with the supporting guides between the winding groups; the circular iron cores and the circular windings are arranged next to each other, there are seal bushings on circular inside surfaces of the circular iron cores and circular windings; the seal bushings are connected to endcovers; and all these form the airtight cavity, and
wherein the supporting guides are circular and have circular inside surfaces made from an alloy; and the supporting guides have smaller inside diameters than the seal bushings.

2-4. (Canceled).

5. (Currently Amended) The ~~numerically controlled~~ reciprocating submersible pump apparatus[[,]] according to claim 1, ~~characterized in that~~ wherein the reciprocating head's iron cores are circular and around a solid shaft of the reciprocating head with permanent magnets between the circular iron cores; and the reciprocating head circular iron cores' outside surfaces

are made from alloy and form a friction couple with the supporting guides via alloy layers on inside surfaces of the supporting guides.

6. (Currently Amended) The ~~numerically controlled~~ reciprocating submersible pump apparatus[[,]] according to claim 5, ~~characterized in that~~ wherein the permanent magnets are equally spaced between the reciprocating head's circular iron cores; and the magnets have smaller outside diameters than the circular iron cores.

7. (Currently Amended) The ~~numerically controlled~~ reciprocating submersible pump apparatus[[,]] according to claim 1, ~~characterized in that~~ wherein there is a pump housing outside a pump cylinder of the pump, forming a circular space between them for sand residue; and a plunger push rod of the pump is connected to an upper end of a solid shaft of the reciprocating head of the drive through the sieve tube.

8. (Currently Amended) The ~~numerically controlled~~ reciprocating submersible pump apparatus [[,]] according to claim 1, ~~characterized in that~~ further comprising an overground numerical control unit such that the reciprocating submersible pump apparatus is a numerically controlled reciprocating submersible pump apparatus and wherein the oil tube leads to a ground surface[[:]]and the stator is connected to power terminals of [[an]] said overground numerical control unit.

9. (New) A reciprocating submersible pump apparatus, comprising:
a pump having a pump housing and an internal, adjustable pump component within the pump housing;
a sieve tube to which is connected said pump;
a balance sieve tube;
a stator device comprising a stator housing in which is positioned a combination stacked sequence of

(a) a first spacer and guide device,
(b) a winding combination of opposite end covers and intermediate sequenced core components and windings, each in a direct contact stack arrangement, and
(c) a second spacer and guide device;
first and second couplers positioned at opposite ends of said stator housing with said first coupler being positioned for coupling of said stator device to said sieve tube and said second coupler being positioned for coupling of said stator device to said balance sieve tube; and
a reciprocating head positioned within said stator device and drivingly connected to the adjustable pump component as to provide for the pumping of an underground fluid.

10. (New) The reciprocating submersible pump apparatus of claim 9 wherein said first spacer and guide device comprises a sleeve and an annular guide.

11. (New) The reciprocating submersible pump apparatus of claim 10 wherein said annular guide is nested in an annular groove of said sleeve and has an internal surface of an alloy material.

12. (New) The reciprocating submersible pump apparatus of claim 11 wherein said internal surface is a sintered iron material.

13. (New) The reciprocating submersible pump apparatus of claim 10 wherein said reciprocating head comprises a plurality of core members and magnet components arranged in series, and with said core members having an exterior surface of an alloy material that is designed for friction contact with an alloy internal surface of said annular guide.

14. (New) The reciprocating submersible pump apparatus of claim 10 wherein said first coupler is in direct stack contact with the sleeve of said first spacer and guide device.

15. (New) The reciprocating submersible pump apparatus of claim 9 wherein said first coupler is in direct stack contact with said first spacer and guide device.

16. (New) The reciprocating submersible pump apparatus of claim 9 wherein said stator housing and combination stacked sequence provides a sealed stator device suitable for deep well functioning.

17. (New) The reciprocating submersible pump apparatus of claim 16 wherein said sealed stator device is provided internally with an insulating oil.

18. (New) The reciprocating submersible pump apparatus of claim 9 wherein said pump includes an internal cylinder within said pump housing and said moving pump component includes a plunger assembly in driving engagement with said reciprocating head.

19. (New) The reciprocating submersible pump apparatus of claim 18 wherein between said internal cylinder and said pump housing is provided a debris deposit clearance space, and wherein said stator housing has an exterior surface positioned radially external to an exterior surface of said pump housing.

20. (New) The reciprocating submersible pump apparatus of claim 9 wherein said balance sieve tube comprises a plurality of sets of sieve holes, and said sets being spaced along an axis of elongation of said balance sieve tube.

21. (New) A reciprocating submersible pump apparatus, comprising:
a pump having a pump housing and an internal, adjustable pump component within the pump housing;
a sieve tube to which is connected said pump;
a balance sieve tube;

a sealed stator device comprising a stator housing in which is positioned a combination stacked sequence of

- (a) a first spacer and guide device,
- (b) a winding combination of opposite end covers and intermediate sequenced core components and winding components each in a direct contact stack arrangement, and
- (c) a second spacer and guide device;

wherein said stator device is placed in a stacked arrangement relative to said sieve and balance tube such that an exterior portion of said stator device is radially external to a radially external surface of each of said sieve tube and balance sieve tube, and an interior surface of said stator device is positioned radially inward of an interior surface of each of said sieve tube and balance sieve tube relative to respective coupling regions of said stator device to said sieve tube and balance sieve tube; and

a reciprocating head positioned within said stator device and drivingly connected to the adjustable pump component as to provide for fluid pumping in a submersible setting.

22. (New) The reciprocating submersible pump apparatus of claim 21 further comprising a first coupler for coupling said stator device to said balance sieve tube and a second coupler for coupling said stator device to said sieve tube and said first coupler being in direct contact and in a stack relationship with said first spacer and guide device and said second coupler being in direct contact and in a stack relationship with said second spacer and guide device.

23. (New) The reciprocating submersible pump apparatus of claim 22 wherein said first and second couplers define stepped recesses for receiving respective ends of the balance sieve tube and sieve tube.

24. (New) The reciprocating submersible pump apparatus of claim 21 wherein said reciprocating head comprises core rings and magnetic rings in series with the core rings having a

larger diameter than the magnetic rings and an alloy layer exterior surface, and said first and second spacer and guide devices each feature a spacer with an annular recess as well as a guide device with an alloy layer interior surface, with the guide device being received within the annular recess as to have the alloy layer interior surface extend into guiding friction contact with the alloy layer exterior surface of said core rings of said reciprocating head.